

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

ROBERT ALVAREZ ET AL.

Serial No. 08/964,518 (TI-19177)

Filed November 5, 1997

For: STABILIZER/SPACER FOR SEMICONDUCTOR DEVICE

Art Unit 2811

Examiner A. Williams

Assistant Commissioner for Patents

Washington, D. C. 20231

Sir:



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2811

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J. Doz
7/21/99

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BRIEF ON APPEAL

REAL PARTY IN INTEREST

The real party in interest is Texas Instruments Incorporated, a Delaware corporation with principal offices at 7839 Churchill Way, Dallas, Texas 75251.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals and/or interferences.

STATUS OF CLAIMS

This is an appeal of claims 1 to 14, all of the rejected claims. No claims have been

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STATUS OF AMENDMENTS

An amendment was filed after final rejection and was not entered for purposes of appeal and a Petition to enter the amendment is now pending.

SUMMARY OF INVENTION

The invention relates to a leadframe/stabilizer for use with semiconductor devices. The leadframe/stabilizer includes an electrically conductive leadframe 30a having a central semiconductor die-receiving region over die pad mount 40 and a plurality of leadframe leads 36 to 39 extending outwardly from the central die-receiving region. A stabilizer 35 extends partially along the length of and on each side of the leadframe leads to improve leadframe planarity. The stabilizer includes the die pad mount 40 integral with and forming a part of the stabilizer disposed beneath the central semiconductor die-receiving region for retaining a semiconductor die thereon. The stabilizer and die pad mount can be made of, but is not limited to, an insulating material, a plastic material or ceramic material. The die pad mount preferably has a recess in one surface into which a semiconductor die is mounted.

ISSUE

The sole issue on appeal is whether claims 1 to 14 are anticipated by Hojyo (U.S. 5,559,364).

GROUPING OF CLAIMS

The claims do not stand or fall together for reasons set forth hereinbelow under ARGUMENT.

ARGUMENT

Claims 1 to 14 were rejected under 35 U.S.C. 102(b) as being anticipated by Hojyo (U.S. 5,559,364). This rejection requires that each step or element and the function ascribed thereto be found in a single reference. This is not the case herein and, accordingly, the rejection is without merit as will be demonstrated.

Claim 1, from which claims 2 and 5 depend, requires, among other features, a stabilizer extending partially along the length of and on each side of the leadframe leads. The stabilizer also includes a die pad mount integral with and forming a part of the stabilizer which is disposed beneath the central semiconductor die-receiving region for retaining a semiconductor die thereon. No such structure is taught or even suggested by Hojyo.

Claim 2 further limits claim 1 by requiring that the stabilizer and die mount pad be made of an insulating material. No such combination is taught or suggested by Hojyo.

Claim 3 further limits claim 1 by requiring that the stabilizer and die mount pad be made of a plastic material. No such combination is taught or suggested by Hojyo.

Claim 4 further limits claim 1 by requiring that the stabilizer and die mount pad be made of a ceramic material. No such combination is taught or suggested by Hojyo.

Claim 5 further limits claim 1 by requiring that the die pad mount have a recess in one surface into which a semiconductor die is mounted. It is respectfully submitted that Hojyo does not teach or suggest this feature either alone or in the combination as claimed. In this way, for example, a semiconductor die can be disposed on the die mount and, due to the recess, still have its top surface coplanar with or even below the leadframe leads to allow easy connection between die pads on the die and leadframe leads.

Claim 6 contains the features discussed above with reference to claim 1 and therefore defines over Hojyo for at least the reasons set forth above with reference to claim 1.

Claim 6 further requires a semiconductor die mounted in the recess. No such feature is taught or suggested by Hojyo either alone or in the combination as claimed.

Claim 7 depends from claim 6 and therefore defines patentably over Hojyo for at least the reasons presented above with reference to claim 6.

Claim 7 further limits claim 6 by requiring that the stabilizer be made of an insulating material. No such combination is taught or suggested by Hojyo.

Claim 8 further limits claim 6 by requiring that the stabilizer be made of a plastic material. No such combination is taught or suggested by Hojyo.

Claim 9 further limits claim 1 by requiring that the stabilizer be made of a ceramic material. No such combination is taught or suggested by Hojyo.

Claim 10 relates to a method and requires the step of providing a stabilizer having a die pad integral therewith and disposed beneath the central semiconductor die-receiving region. No such step is taught or suggested by Hojyo either alone or in the combination as claimed.

Claim 11 and 12 depend from claim 10 and therefore define over Hojyo for at least the reasons presented above with reference to claim 10.

In addition, claim 11 further limits claim 10 by requiring the step of forming a recessed area in the die pad for mounting of a semiconductor die therein. No such step is taught or suggested by Hojyo either alone or in the combination as claimed.

Claim 12 further limits claim 10 by requiring that the stabilizer be made of an insulating material. No such combination is taught or suggested by Hojyo.

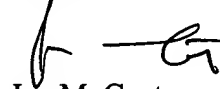
Claim 13 further limits claim 10 by requiring that the stabilizer be made of a plastic material. No such combination is taught or suggested by Hojyo.

Claim 14 further limits claim 10 by requiring that the stabilizer be made of a ceramic material. No such combination is taught or suggested by Hojyo.

CONCLUSIONS

For the reasons stated above, reversal of the final rejection and allowance of the claims on appeal is requested that justice be done in the premises.

Respectfully submitted,



Jay M. Cantor
Reg. No. 19906
(202) 639-7713

APPENDIX

It is initially noted that a Petition is presently pending requesting entry of the amendment after final rejection on the ground that it is merely cosmetic and does not raise new issues or require an additional search. Accordingly, the claims on appeal as presented hereinbelow include brackets and underline, the brackets showing that which was requested to be canceled after final rejection and the underline showing that which was requested to be added after final rejection.

The claims on appeal read as follows:

1. A leadframe/stabilizer for use with semiconductor devices, comprising:

(a) an electrically conductive leadframe having a central semiconductor die-receiving region and a plurality of leadframe leads extending outwardly from said central die-receiving region; and

(b) a stabilizer extending partially along the length of and on each side of said leadframe leads to improve leadframe planarity[;], [and] said stabilizer including:

(i) a die pad mount integral with and forming a part of said stabilizer disposed beneath said central semiconductor die-receiving region for retaining a semiconductor die thereon.

2. The leadframe/stabilizer according to Claim 1, wherein said stabilizer and die pad mount is (sic) made of an insulating material.

3. The leadframe/stabilizer according to Claim 1, wherein said stabilizer and die pad mount is (sic) made of a plastic material.

4. The leadframe/stabilizer according to Claim 1, wherein said stabilizer and die pad mount is (sic) made of a ceramic material.

5. The leadframe/stabilizer according to Claim 1, wherein said die pad mount has a recess in one surface into which a semiconductor die is mounted.

6. A leadframe stabilizer for use with semiconductor devices, comprising:

(a) an electrically conductive leadframe having a central semiconductor die-receiving region and a plurality of leadframe leads extending outwardly from said central die-receiving region; and

(b) a stabilizer extending partially along the length of and on each side of said lead leadframe leads to improve leadframe planarity[;], said stabilizer including:

(i) a die pad mount integral with and forming a part of said stabilizer disposed beneath said central semiconductor die-receiving region for retaining a semiconductor die thereon;

(ii) a recess in one surface of said die pad mount; and

(c) a semiconductor die mounted in said recess.

7. The leadframe/stabilizer according to Claim 6, wherein said stabilizer is made of an insulating material.

8. The leadframe/stabilizer according to Claim 1, wherein said stabilizer is made of a plastic material.

9. The leadframe/stabilizer according to Claim 1, wherein said stabilizer is made of a ceramic material.

10. A method for stabilizing the leads of a lead frame and providing a semiconductor die mount pad, comprising the steps of:

(a) providing a leadframe having a central semiconductor die-receiving region and a plurality of leadframe leads extending outwardly from said central die-receiving region;

(b) providing a stabilizer, said stabilizer having a die pad integral therewith and disposed beneath said central semiconductor die-receiving region; and

(c) adhering [a] said stabilizer along part of the length and on each side of said leadframe leads to improve leadframe planarity[; and

forming a die pad integral with said stabilizer disposed beneath said central semiconductor die-receiving region].

11. The method according to Claim 10, including the step of forming a recessed area in the die pad for mounting of a semiconductor die in said recessed area.

12. The method according to Claim 10, wherein said stabilizer is made of an insulating material.

13. The method according to Claim 10, wherein said stabilizer is made of a plastic material.

14. The method according to Claim 10, wherein said stabilizer is made of a ceramic material.